

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Helmut Jerg et al
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Group Art Unit: 2836
Examiner: Ann Thi Hoang
Title: FIRE PROTECTION DEVICE FOR DOMESTIC
APPLIANCES

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APPEAL BRIEF

Pursuant to 37 CFR 1.192, Appellant hereby files an appeal brief in the above-identified application. This Appeal Brief is accompanied by the requisite fee set forth in 37 CFR 1.17(f).

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(1) REAL PARTY IN INTEREST

The real party in interest is BSH Bosch und Siemens Hausgeraete GmbH.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS

Claims 11-28 are pending in the application and have been finally rejected. The final rejection of claims 11-28 is being appealed.

(4) STATUS OF AMENDMENTS

No Amendments have been filed subsequent to the Final Rejection.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

CLAIM 11

Independent Claim 11 of the present application recites a fire protection device for domestic appliances 2, including, with reference to Figure 1 of the present application, at least one fault current circuit breaker in the form of a relay 8 coupled to the input electrical supply of at least one conductor 3 of a domestic appliance 2 (p. 5, ll. 34-37). The fault current circuit breaker disconnects the electrical supply from the appliance 2 when the fault current circuit breaker senses a fault current in the at least one conductor 3 (p. 6, ll. 25-32). The present invention also includes at least one gas sensor 5 coupled to sense the quantity of at least one control gas in the appliance 2 (p. 6, ll. 6-8). The gas sensor 5 also

causes the electrical supply to be disconnected from the appliance 2 when the gas sensor 5 senses a predetermined quantity of the at least one control gas (p. 6, ll. 9-13).

CLAIM 21

According to independent claim 21, and as seen in Fig. 1, the present invention is directed to a fire protection device for domestic appliances, including at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor 3 of a domestic appliance 2 (p. 5, ll. 34-37). The fault current circuit breaker disconnects the electrical supply from the appliance when the fault current circuit breaker senses a fault current in the at least one conductor 3 (p. 6, ll. 25-32). The fault current circuit breaker includes a relay 8 connected to the at least one conductor 3, the relay 8 having a reset channel and a cumulative current transformer 9 operable to constantly measure the sum of all currents and operable to send a signal to the reset channel of the relay in the event of the detection of a predetermined deviation from a predetermined current sum, which predetermined deviation is indicative of a fault current, and the relay 8 being operable to disconnect the electrical supply from the appliance upon receipt of the signal. (p. 6, ll. 25-32). The present invention also includes at least one gas sensor 5 coupled to sense the quantity of at least one control gas in the appliance 2, which gas sensor 5 also causes the electrical supply to be disconnected from the appliance 2 when the gas sensor 5 senses a predetermined quantity of the at least one control gas (p. 6, ll. 9-13).

CLAIM 25

According to independent claim 25, a fire protection device for domestic appliances is provided and includes at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor 3 of a domestic appliance 2 (p. 5, ll. 34-37). The fault current circuit breaker disconnects the electrical supply from the appliance 2 when the fault current circuit breaker senses

a fault current in the at least one conductor 3 (p. 6, ll. 25-32). At least one gas sensor 5 is coupled to sense the quantity of at least one control gas that is a non-carbonaceous byproduct of combustion in the appliance 2. The gas sensor 5 also causes the electrical supply to be disconnected from the appliance 2 when the gas sensor senses a predetermined quantity of the at least one control gas (p. 6, ll. 9-13).

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- a. Whether claims 11 - 12 and 18 - 20 are unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron?
- b. Whether claim 13 is unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron as applied to claim 11, and further in view of US Patent No. 5,943,199 to Aromin?
- c. Whether claims 14 – 17 are unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron and US Patent No. 5,943,199 to Aromin, and further in view of US Patent No. 5,604,387 to Cheyne?
- d. Whether claim 21 is unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron?
- e. Whether claims 22, 23, and 25-27 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron?

and further in view of US Patent No. 3, 973, 192 to Justi et al.?

- f. Whether claims 22, 24-26 and 28 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron and further in view of US Patent No. 1, 979, 976 to Marshall?

(7) ARGUMENT

- a. Whether claims 11 - 12 and 18 - 20 are unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron?

US Patent No. 5,946,180 to Simpson discloses an electrical connection safety apparatus that detects the electrical current rating of electrical cords or connectors which are plugged into electrical outlets and disconnects power to the outlet and connector whenever the cord current rating is exceeded. The electrical connection safety apparatus can be used in the form of adaptors which couple to conventional electrical connectors and electrical outlets.

US Patent No. 6,046,441 to Daffron discloses a device for disabling an electrical appliance when a fire erupts, the device including an auxiliary plug member 1 within which is a circuit breaker mechanism for disabling power to the electrical device upon receiving a signal from a fire detection assembly comprising a plurality of carbon sensing means such as a conventional carbon monoxide or carbon dioxide detector.

With respect to the rejection of claims 11-20 under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron as the primary references, it is submitted that neither US Patent No. 5,946,180 to Simpson nor US Patent No. 6,046,441 to Daffron, alone or in combination, teaches or discloses the device recited in claim 11 of the instant application, wherein the recited fire protection device for domestic appliances includes at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance, which fault current circuit breaker disconnects the electrical supply from the appliance when the fault current circuit breaker senses a fault current in the at least one conductor; and at least one gas sensor coupled to sense the quantity of at least one control gas in the appliance, which gas sensor also causes the electrical supply to be disconnected from the appliance when the gas sensor senses a predetermined quantity of the at least one control gas.

In the Office Action, it is asserted that US Patent No. 5,946,180 to Simpson teaches a fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance and it is further asserted that it would be within the level of ordinary skill in the art at the time the present invention was made to have modified the fault current circuit breaker arrangement of US Patent No. 5,946,180 to Simpson with the gas sensor of US Patent No. 6,046,441 to Daffron for sensing gaseous combustion by-products for the purpose of providing a fire protection device that sense both fault currents and gaseous combustion by-products. However, Applicants submit that US Patent No. 5,946,180 to Simpson provides no hint of the desirability of sensing gaseous combustion by-products, such as is recited in Claim 11 of the present application, and US Patent No. 6,046,441 to Daffron provides no hint of the desirability of a fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance. Thus, neither US Patent No. 5,946,180 to Simpson nor US Patent No. 6,046,441 to Daffron themselves provide one of ordinary skill in the art

with some motivation to combine US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron with one another. Moreover, even if one of ordinary skill in the art were provided with some motivation to combine US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron with one another, which Applicants submit there is not, the arrangement asserted by the Office Action from selectively combining US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron would still not perform the same function or operate in the same manner as the device recited in claim 11 of the present application.

Thus, it is accordingly believed to be clear that neither of the primary references US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron, whether taken alone or in any combination, either show or suggest the features of claim 11. Additionally, it is submitted that the secondary references US Patent No. 5,943,199 to Aromin and US Patent No. 5,604,387 to Cheyne fail to overcome the deficiencies of the primary references US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron. Claim 11 is, therefore, patentable over the art and, since claims 12 - 20 are ultimately dependent on claim 11, it is submitted that claims 12 - 20 are patentable for at least the reason that claim 11 is patentable.

Therefore, the rejection of Claims 11-12 and 18-20 under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron is in error and it is respectfully requested that the outstanding rejection be reversed.

b. Whether claim 13 is unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron as applied to claim 11, and further in view of US Patent No. 5,943,199 to Aromin?

US Patent No. 5,946,180 to Simpson discloses an electrical connection safety apparatus that detects the electrical current rating of electrical cords or connectors which are plugged into electrical outlets and disconnects power to the outlet and connector whenever the cord current rating is exceeded. The electrical connection safety apparatus can be used in the form of adaptors which couple to conventional electrical connectors and electrical outlets.

US Patent No. 6,046,441 to Daffron discloses a device for disabling an electrical appliance when a fire erupts, the device including an auxiliary plug member 1 within which is a circuit breaker mechanism for disabling power to the electrical device upon receiving a signal from a fire detection assembly comprising a plurality of carbon sensing means such as a conventional carbon monoxide or carbon dioxide detector.

US Patent No. 5,943,199 to Aromin discloses a miniature appliance leakage current interrupter 11 connected to a mains plug.

The Examiner noted that with regard to claim 13, US Patent No. 5,946,180 to Simpson discloses that a false circuit breaker may be installed in with the electrical supply outlet or embodied in an electrical outlet adapter. US Patent No. 5,946,180 to Simpson does not disclose a fault current circuit breaker to be integrated into a mains plug of the electrical supply of the appliance. Nevertheless, the Examiner asserts that US Patent No. 5,943,199 to Aromin discloses a circuit breaker 13 on a circuit board provided with circuitry 11 integrated into a mains plug as seen in Figures 5 and 8 and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the circuit breaker of Simpson into the mains plug as assertedly done by US Patent No. 5,943,199 to

Aromin in order to provide a single plug unit for easier use and avoid extra connectors as required by an adapter.

Claim 13 ultimately depends from claim 11 which has been demonstrated to be a condition for allowance due to the inability of the US Patent No. 5,946,180 to Simpson reference to render the present invention obvious in combination with any other reference. Accordingly, claim 13 should be considered in condition for allowance as well.

US Patent No. 5,943,199 to Aromin provides a ground fault indicator that is self-contained within the plug as for mains connection as seen in the referenced Figures 5 and 8. The Aromin device is a ground fault indicator which trips the circuit in response to a floating ground or ground fault in whatever device to which it is connected. The unit is self-contained and receives no external stimulus. Therefore, it is improperly combined with the aforesaid Simpson and Daffron references and in any event such a combination would not result in the present invention. US Patent No. 5,943,199 to Aromin teaches the singularity of the sensor and trip unit within the mains plug which is responsive to a leakage current and has provided for the safety of the user from electric shock and is ineffective in the case of fire. Therefore, the rejection of claim 13 based on the aforesaid combination is in error and should be reversed.

c. Whether claims 14 – 17 are unpatentable under 35 U.S.C. §103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,046,441 to Daffron and US Patent No. 5,943,199 to Aromin, and further in view of US Patent No. 5,604,387 to Cheyne?

Claims 14-17 are ultimately dependent from claim 11 which has been demonstrated to be in condition for allowance and, accordingly, claims 14-17

should be considered in condition for allowance as well. It has also been demonstrated that US Patent No. 5,946,180 to Simpson has no effect on the patentability of the present claims and the combination of US Patent No. 5,946,180 to Simpson, US Patent No. 6,046,441 to Daffron and US Patent No. 5,943,199 to Aromin will not result in the present invention. The addition of US Patent No. 5,604,387 to Cheyne does nothing to alleviate the aforesaid deficiencies of the foregoing art.

US Patent No. 5,946,180 to Simpson discloses an electrical connection safety apparatus that detects the electrical current rating of electrical cords or connectors which are plugged into electrical outlets and disconnects power to the outlet and connector whenever the cord current rating is exceeded. The electrical connection safety apparatus can be used in the form of adaptors which couple to conventional electrical connectors and electrical outlets.

US Patent No. 6,046,441 to Daffron discloses a device for disabling an electrical appliance when a fire erupts, the device including an auxiliary plug member 1 within which is a circuit breaker mechanism for disabling power to the electrical device upon receiving a signal from a fire detection assembly comprising a plurality of carbon sensing means such as a conventional carbon monoxide or carbon dioxide detector.

US Patent No. 5,943,199 to Aromin discloses a miniature appliance leakage current interrupter 11 connected to a mains plug.

US Patent No. 5,604,387 to Cheyne discloses low voltage switch 7 for supplying a low voltage load to an appliance such as a laundry machine.

Claims 14-17 ultimately depend from claim 11 which has been shown to be in condition for allowance due to the deficiencies of US Patent No. 5,946,180 to Simpson in rendering the present invention obvious. US Patent No. 5,604,387 to Cheyne does nothing to alleviate the problems with the Simpson patent. US Patent No. 5,604,387 to Cheyne discloses a field effect transistor illustrated at 7 that hardly acts as a mains switch, as asserted by the Examiner. As stated in US Patent No. 5,604,387 to Cheyne, the operation of the circuit begins with the supply voltage present between the rails 2 and 3, transistors 5 and 6 were turned on by the PWN and commutating means 18a which, with the activating means 18b, form control means 18. Assuming the field effect transistor 7 is also turned on, current will flow from rail 3 through transistor 5, the motor winding, the transistor 6 and the field effect transistor 7 to rail 2 (Col. 3, ll. 35-42).

In substantial contrast, the present invention provides a simple switch illustrated generally at 6. Accordingly, US Patent No. 5,604,387 to Cheyne is not combinable with either US Patent No. 5,946,180 to Simpson or US Patent No. 6,046,441 to Daffron to achieve the present invention and it is hereby respectfully requested that the outstanding rejection of claims 14-17 be overturned.

d. Whether claim 21 is unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron?

US Patent No. 5,946,180 to Simpson discloses an electrical connection safety apparatus that detects the electrical current rating of electrical cords or connectors which are plugged into electrical outlets and disconnects power to the outlet and connector whenever the cord current rating is exceeded. The electrical connection safety apparatus can be used in the form of adaptors which couple to conventional electrical connectors and electrical outlets.

US Patent No. 6,046,441 to Daffron discloses a device for disabling an electrical appliance when a fire erupts, the device including an auxiliary plug member 1 within which is a circuit breaker mechanism for disabling power to the electrical device upon receiving a signal from a fire detection assembly comprising a plurality of carbon sensing means such as a conventional carbon monoxide or carbon dioxide detector.

US Patent No. 6,603,221 to Liu discloses a method of automatically resetting a switch or relay after a power interruption in order to avoid accidents that may occur when the supply of power is resumed unexpectedly.

Regarding independent claim 21, the argument applying to independent claim 11 against the combination of US Patent No. 5,946,180 to and US Patent No. 6,046,441 to Daffron apply with equal force. US Patent No. 6,603,221 to Liu does nothing to cure the deficiencies of US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron.

The Examiner asserts that US Patent No. 5,946,180 to Simpson discloses a cumulative current transformer 32,34 operable to constantly measure the sum of all currents. Contrary to this assertion, US Patent No. 5,946,180 to Simpson actually discloses a simple one-turn primary transformer 32 with a secondary winding 34. The line or "hot" conductor 36 and neutral conductors 38 communicate with the power supply and with contacts associated with slots 18 through receptacle 16, with line conductor 36 passing through the ring of the primary transformer 32. A voltage signal $V(\text{load})$ is generated in the secondary winding 34 of transformer 32 by the load current passing through conductor 36, with $V(\text{load})$ being proportional to the load current delivered through the conductor to 36 to connector 10A. (Col. 7, ll. 42 – 52; col. 7, ll. 57 – 61).

As can be seen, at best, the Simpson device measures an instantaneous load current for conversion to a voltage as indicative of instantaneous load current for use in the trip function of the Simpson device. Accordingly, the US Patent No. 5,946,180 to Simpson does not disclose a structural element included in claim 21 of the present invention and, therefore, US Patent No. 5,946,180 to Simpson cannot be used to combine with US Patent No. 6,603,221 to Liu, US Patent No. 6,046,441 to Daffron or any other reference to render claim 21 obvious. Further neither US Patent No. 6,603,221 to Liu nor US Patent No. 6,046,441 to Daffron disclose such a cumulative current transformer. Therefore, claim 21 should be in condition for allowance and it is respectfully requested that the outstanding rejection of claim 21 under 35 US §103(a) be overturned.

e: Whether claims 22, 23, and 25-27 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron and further in view of US Patent No. 3, 973, 192 to Justi et al.?

First of all, Claims 22 and 23 depend from claim 21 which has been shown to be in condition for allowance and therefore, claims 22 and 23 should be allowable. Claim 25 is in condition for allowance as will be demonstrated in greater detail hereinafter. Claims 26 and 27 depend from claim 25 and should therefore be considered in condition for allowance as well.

Moreover, in view of the deficiencies of the primary reference, namely, US Patent No. 5,946,180 to Simpson, it is submitted that claim 22, claims 23 and 24 ultimately dependent upon claim 22, claim 25, and claims 26 – 28 ultimately dependent upon claim 25, are patentable for at least the reason that claim 11 is patentable.

Claim 25 requires a gas sensor coupled to sense the quantity of at least one controlled gas that is a non-carbonaceous byproduct of combustion in the appliance. Since it has been demonstrated that US Patent No. 5,946,180 to Simpson is not a proper reference to combine with US Patent No. 6,046,441 to Daffron, the combination of US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron is not available to reject Claim 25 based on obviousness. Therefore, no matter what the disclosure of US patent no. 3, 973,192 to Justi et al., the combination still would not result in the present invention due to the deficiencies of US Patent No. 5,946,180 to Simpson and US Patent No. 6,046,441 to Daffron. Therefore, Claim 25 should be considered in condition for allowance.

Based on the above, claims 22, 23 and 25 – 27 should be considered in condition for allowance and it is respectfully requested that the outstanding rejection under 35 USC §103(a) be overturned.

f. Whether claims 22, 24-26 and 28 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,946,180 to Simpson in view of US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron and further in view of US Patent No. 1, 979, 976 to Marshall?

Claims 22 and 24 depend from claim 21 which has been shown to be in condition for allowance. Therefore, claims 22 and 24 should be in condition for allowance as well. Similarly, claim 25 has been demonstrated to be in condition for allowance and, therefore, claims 26 and 28 should be considered a condition for allowance as well.

Further, while it has been demonstrated that US Patent No. 5,946,180 to Simpson, US Patent No. 6,603,221 to Liu and US Patent No. 6,046,441 to Daffron

are improperly combined and, therefore, as discussed above with reference to the rejection of Claim 25, US Patent No. 1,979,976 to Marshall does not cure the deficiencies of Simpson and Dafron. US Patent No. 1,979,976 to Marshall discloses a gas detector for detecting chlorine to prevent a disaster resulting from consequence of the unnoticed accumulation of an inflammable, poisonous or otherwise obnoxious gases in mines, sewers, the locality of gas mains and the like (Col.1, ll. 5–9). In such cases, it is important to provide gas detecting means which will not merely give an alarm when the danger becomes acute, but which is sufficiently sensitive to respond as soon as the percentage of obnoxious gas present approaches a limiting safe value, thereby warning the occupants or setting an operation fans or other preventive means and ample time (Col. 1, ll. 17–26).

As can be seen, US Patent No. 1,979,976 to Marshall is concerned with the presence of pre-combustion gases, not gases that are the byproduct of combustion. Marshall seeks to forego priors and other toxic events based on an early warning that obnoxious gases are in the atmosphere. In substantial contrast, the present invention detects gases that are the byproduct of an ongoing conflagration and, therefore, provide a fire detection means. Accordingly, a combination of US Patent No. 5,946,180 to Simpson, US Patent No. 6,046,441 to Daffron and US Patent No. 1,979,976 to Marshall would not result in the present invention and it is therefore respectfully asserted that the present invention, as recited in claims 22, 24 – 26 and 28 is patentable and the aforesaid claims are in condition for allowance. It is therefore respectfully requested that standing rejection of these claims be overturned.

(8) CONCLUSION

In view of the foregoing discussion, it is respectfully requested that the Honorable Board of Patent Appeals and Interferences overrule the final rejection of Claims 11-28 over the cited art, and hold that the Appellant's claim be allowable over such art.

Respectfully submitted,



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CLAIMS APPENDIX

1 – 10 Cancelled.

11. A fire protection device for domestic appliances, comprising:
at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance, which fault current circuit breaker disconnects said electrical supply from said appliance when said fault current circuit breaker senses a fault current in said at least one conductor; and
at least one gas sensor coupled to sense the quantity of at least one control gas in said appliance, which gas sensor also causes said electrical supply to be disconnected from said appliance when said gas sensor senses a predetermined quantity of said at least one control gas.
12. The fire protection device according to claim 11, including said appliance including a plurality of conductors, said fault current circuit breaker coupled to each of said conductors and a fault current detected in one of said conductors, causes said fault current circuit breaker to disconnect said electrical supply from said appliance by an all-pole disconnection and said gas sensor also disconnects said electrical supply from said appliance by an all-pole disconnection.
13. The fire protection device according to claim 11, including said fault current circuit breaker integrated into a mains plug of said electrical supply of said appliance.

14. The fire protection device according to claim 13, including a main switch for supplying individual components of said domestic appliance is coupled to said mains plug for supplying low voltage to said components.
15. The fire protection device according to claim 14, including said gas sensor is connected to said fault current circuit breaker.
16. The fire protection device according to claim 14, including said gas sensor is connected to a protective conductor and said fault current circuit breaker is triggered at a predetermined concentration of said control gas.
17. The fire protection device according to claim 14, including said main switch is connected to a protective conductor.
18. The fire protection device according to claim 11, including said fault current circuit breaker acts as a main switch for said domestic appliance.
19. The fire protection device according to claim 11, including said gas sensor is located in a door of said domestic appliance.
20. The fire protection device according to claim 11, including said gas sensor is located in a floor region of said domestic appliance.
21. A fire protection device for domestic appliances, comprising:
at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance, which fault current circuit breaker disconnects said electrical supply from said appliance when said fault current circuit breaker senses a fault current in said at least one conductor, said fault current circuit breaker including a relay connected to the at least one conductor, the relay having a reset channel and a

cumulative current transformer operable to constantly measure the sum of all currents and operable to send a signal to the reset channel of the relay in the event of the detection of a predetermined deviation from a predetermined current sum, which predetermined deviation is indicative of a fault current, and said relay being operable to disconnect said electrical supply from said appliance upon receipt of said signal; and
at least one gas sensor coupled to sense the quantity of at least one control gas in said appliance, which gas sensor also causes said electrical supply to be disconnected from said appliance when said gas sensor senses a predetermined quantity of said at least one control gas.

22. The fire protection device according to claim 21, wherein said one gas sensor is operable to detect a non-carbonaceous byproduct of combustion.
23. The fire protection device according to claim 22, wherein said one gas sensor is operable to detect a non-carbonaceous byproduct of combustion of at least one of polyethylene (PE), polypropylene (PP), polyamide (PA), polyvinyl chloride (PVC) or polystyrol (PS).
24. The fire protection device according to claim 23, wherein said one gas sensor is operable to detect chlorine (Cl) as a non-carbonaceous byproduct of combustion.
25. A fire protection device for domestic appliances, comprising:
at least one fault current circuit breaker coupled to the input electrical supply of at least one conductor of a domestic appliance, which fault current circuit breaker disconnects said electrical supply from said appliance when said

fault current circuit breaker senses a fault current in said at least one conductor; and

at least one gas sensor coupled to sense the quantity of at least one control gas that is a non-carbonaceous byproduct of combustion in said appliance, which gas sensor also causes said electrical supply to be disconnected from said appliance when said gas sensor senses a predetermined quantity of said at least one control gas.

26. The fire protection device according to claim 25, wherein said fault current circuit breaker includes a relay connected to the at least one conductor, the relay having a reset channel and a cumulative current transformer operable to constantly measure the sum of all currents and operable to send a signal to the reset channel of the relay in the event of the detection of a predetermined deviation from a predetermined current sum, which predetermined deviation is indicative of a fault current, and said relay being operable to disconnect said electrical supply from said appliance upon receipt of said signal.

27. The fire protection device according to claim 25, wherein said one gas sensor is operable to detect a non-carbonaceous byproduct of combustion of at least one of polyethylene (PE), polypropylene (PP), polyamide (PA), polyvinyl chloride (PVC) or polystyrol (PS).

28. The fire protection device according to claim 25, wherein said one gas sensor is operable to detect chlorine (Cl) as a non-carbonaceous byproduct of combustion.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None